

# Innovative Self-Powered and Self-Contained Sensor Array for Separation Detection, Phase I

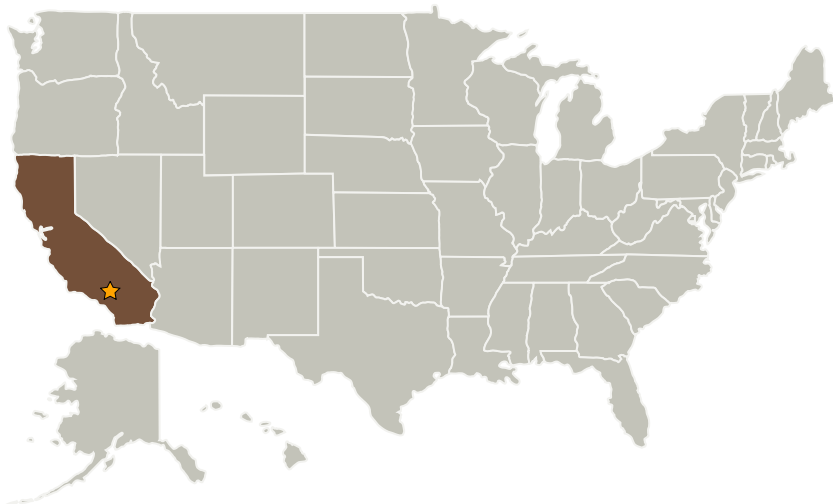
Completed Technology Project (2008 - 2008)



## Project Introduction

The proposed innovation is a self-contained, self-powered, robust flight test sensor array for the determination of separation. The proposed system uses off the shelf, currently available technology to create a reusable distributed sensor array, which requires no external wiring or power source. The system is based on a novel instrumented tuft technology. A distributed array of tuft sensors are embedded in a flexible, self-adhesive backed sheet of polyimide substrate. The proposed separation sensor array will provide real-time, accurate determination of separation across a wide range of flight conditions. The self-contained blanket array can be quickly and easily applied to aircraft surfaces in question. No wiring, external power, or remote viewing is required for acquisition. After testing is complete, the system can be quickly removed and reused. Additionally, the system could be miniaturized for use in ground test facilities or applied to other types of vehicles. The proposed separation sensor array promises to provide a realizable, accurate, efficient, and cost effective measurement system.

## Primary U.S. Work Locations and Key Partners



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## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Center / Facility:

Armstrong Flight Research Center (AFRC)

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Armstrong Flight Research Center(AFRC)	Lead Organization	NASA Center	Edwards, California
Rolling Hills Research Corporation	Supporting Organization	Industry	El Segundo, California

## Primary U.S. Work Locations

California

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

**Principal Investigator:**

Michael Kerho

## Technology Areas

**Primary:**

- TX05 Communications, Navigation, and Orbital Debris Tracking and Characterization Systems
  - └ TX05.2 Radio Frequency
    - └ TX05.2.6 Innovative Antennas